

REMARKS

The drawings were objected to under 37 CFR 1.83(a). The specification was objected to as failing to provide proper antecedent basis for the claimed subject matter. Claim 5 was rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 5, 6 and 11 to 15 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 2,731,919 to Prendergast (hereinafter “Prendergast”). Claims 5 and 14 were rejected under 35 U.S.C. §102(b) as being clearly anticipated by U.S. Patent Number 5,975,868 to Agner (hereinafter “Agner”). Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Prendergast in view of legal precedent. Claim 9 was rejected under 35 U.S.C. §103(a) as being unpatentable over Prendergast in view of legal precedent. Claims 8, 10 and 12 to 13 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

Claim 5 has been amended.

Reconsideration of the application based on the foregoing amendments and the following remarks is respectfully requested.

Drawing Objections

The drawings were objected to under 37 CFR 1.83(a). The Office Action asserts “the ‘large circle is equal to the fall zone’ recited in claim 5 must be shown or the feature canceled from the claims.”

Claim 5 has been amended to remove this limitation.

Withdrawal of the objection to the drawings is respectfully requested.

Specification Objections

The specification was objected to as failing to provide proper antecedent basis for the claimed subject matter.

Claim 5 has been amended to remove this limitation from the claim.

Withdrawal of the objection to the specification is respectfully requested.

35 U.S.C. §112 Rejections

Claim 5 was rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Office Action asserts that the limitation “the large circle region is equal to the fall zone” “renders the claim indefinite since it does not have detailed supports in the instant specification.”

Claim 5 has been amended to remove this limitation from the claim.

Withdrawal of the rejection of independent claim 5 under 35 U.S.C. §112 is respectfully requested.

35 U.S.C. §102 Rejections

Claims 5, 6, and 11 to 15 were rejected under 35 U.S.C. §102(b) as being anticipated by Prendergast.

Prendergast discloses a pump or motor comprising “a rotor 4 which is surrounded by a stator 5. The rotor is circular in form and is provided around its outer periphery with an even number (sixteen) of equidistant radial slots in each of which a vane 6 is free to slide.” (Col. 2, lines 9 to 13).

Claim 5 is hereby amended to recite “[a] pump comprising:
a double-stroke delivery contour, the delivery contour having at least one rise zone, at least one large circle region, at least one fall zone, and at least one small circle region, and,
a rotor within the delivery contour, the rotor having radially displaceable vanes in radial rotor slots,
an angular range of the large circle region of the delivery contour being lengthened,
wherein the large circle region is greater than the fall zone.”

Prendergast fails to teach or show “an angular range of the large circle region of the delivery contour being lengthened, wherein the large circle region is greater than the fall zone,” as required by claim 5. The Office Action asserts it is “inherent that the large circle region is greater than the fall zone,” however this is not true. Prendergast does not teach the range of the large circle region or the fall zone. Furthermore, it is not inherent that the large circle zone is larger the fall zone as prior art teaches away from such a teaching as shown in Fig. 1 of the present application. Therefore Prendergast does not meet all of the limitations of claim 5 and cannot render claim 5 unpatentable as anticipated by Prendergast.

Withdrawal of the rejections of independent claim 5 and claims 6, 11 and 15, which are directly dependent on claim 5, under 35 U.S.C. §102(b) is respectfully requested.

Claims 5 and 14 were rejected under 35 U.S.C. §102(b) as being clearly anticipated by Agner.

Agner discloses a “vane pump ha[ving] a rotatable rotor in its housing. The rotor has radial slots. Radially movable vanes in the slots engage the contour ring that extends around and defines the bore.” (Col. 1, lines 41 to 44).

Agner fails to teach or show “an angular range of the large circle region of the delivery contour being lengthened, wherein the large circle region is greater than the fall zone,” as recited in claim 5. The Office Action asserts “it is deemed inherent that the large circle region is greater than the fall zone.” This is not true. Large circle region and fall zone of the present invention are equivalent to the precompression region 125 and the discharge region 131 in Fig. 2 of Agner. Fig. 2 shows intake region 119, precompression region 125 and discharge region 131. Precompression region 125 is not larger then the discharge region 131 as evidenced by Fig. 2. Therefore Agner does not meet all of the limitations of claim 5 and cannot render claim 5 unpatentable as anticipated by Agner.

Withdrawal of the rejections of independent claim 5 and claim 14, which is directly dependent on claim 5, under 35 U.S.C. §102(b) is respectfully requested.

35 U.S.C. §103 Rejections

Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Prendergast in view of legal precedent.

Prendergast is discussed above.

In light of the discussion above with respect to claim 5, withdrawal of the rejection to dependent claim 7 is respectfully requested.

Furthermore, it would not have been obvious to one of skill in the art to modify Svenson to include “wherein the pump is a 10 vane pump and the large circle region of the delivery contour on one side is between 48 and 51 degrees” as recited in claim 7. The range established in claim 7 is not a workable range found by routine experimentation. The extension of the large circle range is critical to the invention. Prendergast does not provide any value for the large circle. The claimed range is critical as it shortens the compression region from the prior art and lengthens the pressure equalization process. (Specification, page 2, paragraph [0005], lines 6 to 9).

For this additional reason, withdrawal of the rejection to claim 7 under 35 U.S.C. §103(a) is respectfully requested.

Claim 9 was rejected under 35 U.S.C. §103(a) as being unpatentable over Prendergast in view of legal precedent.

Prendergast is discussed above.

In light of the discussion above with respect to claim 5, withdrawal of the rejection to dependent claim 9 is respectfully requested.

Furthermore, it would not have been obvious to one of skill in the art to modify Prendergast to include “wherein the pump is a 12 vane pump and the large circle region of the delivery contour on one side is between 51 and 55 degrees” as recited in claim 9. The range established in claim 9 is not a workable range found by routine experimentation. The extension of the large circle range is critical to the invention. The claimed range is critical as it shortens the compression region from prior art and lengthens the pressure equalization

process. (Specification, page 2, paragraph [0005], lines 6 to 9). Prendergast fails to teach such a range.

For this additional reason, withdrawal of the rejection to claim 9 under 35 U.S.C. §103(a) is respectfully requested.

Allowable Subject Matter

Claims 8, 10 and 12 to 13 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

In light of the discussion above with respect to claims 5, 7 and 9, withdrawal of the objections to claims 8, 10 and 12 to 13 is respectfully requested.

CONCLUSION

It is respectfully submitted that the application is in condition for allowance and applicants respectfully request such action.

If any additional fees are deemed to be due at this time, the Assistant Commissioner is authorized to charge payment of the same to Deposit Account No. 50-0552.

Respectfully submitted,
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